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from the author

AN ADDRESS

DELIVERED AT THE

ADJOURNED ANNIVERSARY MEETING

OF THE

ENTOMOLOGICAL SOCIETY

OF LONDON,

ON THE 10TH FEBRUARY, 1845,

By GEORGE NEWPORT, F.R.C.S.,

PRESIDENT.

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ANNIVERSARY ADDRESS.

GENTLEMEN,

IN accordance with the laws of our Society, I resign into your hands at this meeting the post of honour with which you have entrusted me during the past two years. The kind consideration that induced you to elect me to the office of President has not, I am certain, been diminished by the efforts I have constantly made to promote the interests of the Society itself, and to maintain respect for the Chair. You must be fully aware, however, that it is no easy matter to give entire satisfaction to every one on each occasion, each person having some views peculiar to himself; and hence I have not expected to be more successful than my predecessors. Nevertheless, it has been my constant endeavour to stimulate our members to exertion; to encourage full discussions on the various subjects brought before you at our meetings; to recommend for adoption by the Council such plans as have appeared most advisable for the interests of the Society; and on every occasion to pursue that course which has appeared to me to be strictly correct, alike fearless of censure and unmindful of approbation, public or private; and I have now only to thank you, most fervently, for the honour you have conferred on me, and for the support you have afforded me in the performance of my official duties.

But before quitting the Chair, I must endeavour to give you some account of the present state of the Society, and some retrospect of our proceedings during the year that has passed.

At our last Anniversary I announced to the Society, that of two Prizes, of Five Guineas each, offered by the Rev. F. W. Hope at the commencement of the year 1843, for the encouragement of subjects connected with entomological pursuits, only one had been competed for;—that in fact but a single paper had been received,

and that the consideration of that paper had been postponed from unavoidable circumstances. I have now the satisfaction of announcing to this meeting that the Committee appointed to examine this paper,—*A Bibliographical Record of the Works of British Entomologists*,—are unanimous in opinion that it fully deserves the prize; which I have now the satisfaction of handing to its meritorious author, Mr. W. F. Evans.

So well satisfied, Mr. Evans, are the Committee, and the Donor of the prize, with the result of your labours, that I may here state to you, and to the Society, I have great reason to believe that Mr. Hope will publish your work entirely at his own expense, and present a large proportion of the copies to the Society for sale, in aid of our finances, to assist in facilitating the more frequent publication of our Transactions and Proceedings.

This generous intention and laudable zeal on the part of Mr. Hope, I need scarcely again remark, deserve our most heartfelt thanks, and I am confident will be fully appreciated by our Society. These are additional proofs—if, indeed, any were wanting,—of his continued good feeling towards this Society; while they show that the possessor of one of the most splendid private entomological collections in this Metropolis is desirous of applying all the means in his power to the further extension of entomological knowledge.

The two Prizes of Five Guineas each offered by Mr. Hope at the commencement of the past year have not been competed for.

I must now call your attention to the immediate affairs of the Society.

First, then, as regards that all-important subject,—the state of our finances. I am happy to inform you that this is much more favourable than at our last Anniversary. Our excellent friend and Treasurer, Mr. Yarrell, is, I believe, prepared to show that this is the case, and that he has a fair balance on hand; notwithstanding that our expenses have been equal to those of preceding years, and that some losses have occurred. I have great pleasure also in informing the Society that our Secretary, Mr. Westwood, announced to the Council at one of its meetings his intention to present to the Society four plates of drawings, to illustrate his papers in that part of our Transactions which is now publishing. This may be regarded as equivalent to a donation to our funds of six pounds, for which Mr. Westwood is fully entitled to our thanks. I have also still greater pleasure in informing you that I have received for our funds a donation of £10, the private bounty of an excellent friend to our Society, which

is to be applied to facilitate one important part of our proceedings, the publication of our Transactions. This especial object of the donation cannot, I am sure, be too highly estimated by our members; as it is chiefly through means of our Transactions that we are enabled to occupy a dignified position amongst the scientific bodies of this Metropolis, and claim to be recognized by the societies of continental Europe. A new part of our Transactions, the first part of the fourth volume, comprising several excellent papers, is now printed, and I trust will be ready for delivery at our next meeting. This constitutes the twelfth part, or eleventh yearly portion published by this Society, and I am certain that it will prove a sufficient guarantee that we have still abundance of vigour in our constitution.

It is a trite saying, Gentlemen, that every year brings its losses with its acquisitions; its regrets with its pleasures. The past year has been productive of both to this Society. The real prosperity of this, as of every other society, depends mainly on the steady increase of active members; as the strength of a country does on the increase and activity of its population. I am sorry to state that, notwithstanding the relatively improved condition of our finances, we can boast of but little infusion of this true source of healthfulness in our association; while we have deeply to lament the loss, by death and resignation, of several good members. During the past year we have received five resignations, and we have also lost two valuable members by death. One of the latter is George Barker, Esq. of High Aldgate, one of our original members. The other is Francis Baily, Esq., LL.D., F.R.S., and President of the Astronomical Society, a name that is respected throughout Europe. Mr. Baily was distinguished as one of our most accurate astronomical observers, and one of the very best mathematicians of this country; and wherever he was known in private life, as an excellent and most amiable man. Although not a practical entomologist, I need scarcely remark, that he was a most ardent admirer of nature in all her works, and was devoted to the forwarding of all the natural sciences. He had been for a long time before his death in an ailing state of health, induced by a painful accident, from which he never entirely recovered.

These are the losses we have experienced. Let us now turn to our acquisitions. We have elected but two ordinary English members in the past year, but have added to our lists several foreign and corresponding members. These are, Charles Lucien Bonaparte,

Prince of Musignano; Dr. Harris of Harvard University in the United States; Signor Achillé Costa of Naples; George Barnston, Esq. of Labrador; the illustrious comparative anatomist and naturalist, Stephano Della Chiaje of Naples; M. Solier of Marseilles; M. Förster of Aix la Chapelle; and M. Putzey of Brussels.

The most gratifying announcements I have now to make, are the valuable donations that have been contributed to our Library. In my former Address I had the pleasure of showing that we had then received as presents nearly one hundred separate publications, but I have now to inform you that during the past year the number of additions has amounted to one hundred and eighty-three volumes. This is an unexpected increase, and I am sure it will be gratifying to the Society to know that we are indebted for more than two-thirds of this number to the liberality of one who has ever been an energetic friend to this Society, the Rev. F. W. Hope. Amongst the works contributed by this gentleman are forty volumes and fifteen parts, 4to, of Rees's Cyclopædia; twenty volumes of the Annals of Philosophy; eighteen volumes of Bonnet's works; one 4to volume of Leuwenhoeck's works; thirty-six volumes of the French New Dictionary of Natural History; Captain Tuekey's Voyage, 4to, with the Crustacea by Dr. Leach; and other separate works, including an extensive collection of foreign publications on the Natural History and Culture of the Silk-worm; the whole amounting to 133 volumes. This is a collection of books of general reference, many of which are highly useful to those who are engaged on special subjects connected with our favourite pursuit.

Amongst the other presents with which we have been favoured during the year are the Philosophical Transactions of the Royal Society, 4to, comprising four parts, for the years 1843 and 1844, and also the abstracts of Proceedings for the same period; all presented by the Royal Society. The Zoological Society also have favoured us with their Transactions, two parts 4to; and the Royal Society of Agriculture have shown us a like consideration. Amongst the foreign societies and friends that have sent us their works, I have great pleasure in mentioning the Boston Society of Natural History in America, the American Philosophical Society, and the Natural History Society of Moscow; the Royal Academy of Munich, and the Royal Societies of Brussels, Lisle and Lyons; the Entomological Society of France, and the Natural History Society of Geneva. We have also been favoured by some of our foreign members with

their own publications. Amongst these I have again the pleasure to announce those of Count Mannerheim, M. Pictet, M. Guérin Ménéville, Professor Schönherr and Captain Hutton.

Besides these contributions to our library, I may notice a present by Mr. Hope of an engraved likeness of a distinguished entomologist, Bonelli; and also another of a different description by Mr. Thrupp, a beautifully executed emblazonment of the emblematic shield which I had the honour of proposing at our last Anniversary, as typifying the principles on which our Society is established.

These donations are evidences of the good feeling that exists amongst our members, and also between the naturalists of this and of other countries; a feeling as honourable to the parties concerned, as it is favourable in every way to the advancement of the common cause of science.

The numerous additions to our Library induce me to offer some further remarks on this subject. The original intention of the Society was to establish a library for the furtherance of our own especial pursuits, and to confine it almost exclusively to entomological books. With this view some of our earliest members contributed numerous excellent entomological works; and through the personal exertions of themselves and of their friends, the Councils of some of the principal societies in London were induced to accept our offer of an exchange of publications. Other societies abroad followed their example, and several distinguished naturalists, both at home and elsewhere, in Europe and America, as you well know, have repeatedly sent us their publications. In many instances these donations, more especially of our foreign friends, are works of great interest and value, that have occupied their laborious and distinguished authors several years in their production and publication, and some of them are still in progress. Amongst these I would point with especial gratification to the elaborate work of Professor Schönherr on the Curculionidæ, a work that has reached its eighth volume; to the admirable production of M. Pictet on some of the Neuroptera, in which every species is accurately delineated; and to our friend Burmeister's 'Handbook of Systematic Entomology,' all which are still in course of publication. From our honorary English members, Messrs. Kirby and Spence, we have received that classical work, 'The Introduction to Entomology,'—an ornament to the literature of our country,—and from Mr. Stephens the 'Illustrations of Entomology.' These are works of standard value.

But besides these works especially devoted to Entomology, we have

also received others on more general subjects, as I have just announced to you, and our whole collection of books amounts to several hundred volumes.

Now it has occurred to me, that however desirable it may be to us, as an Entomological Society, that we should possess as extensive a store as possible of entomological works, there is no reason whatever that we should confine ourselves exclusively to the collection of these alone; since the true value, the ultimate good of every pursuit, does not depend simply on the ascertainment of any one isolated fact, or even of a multitude of facts, in any single department of knowledge, but on the application of these facts, more or less immediately, to some practical purpose. In order to accomplish this, it is necessary in every pursuit that our views should be extended on either side, very far beyond the ascertainment of single truths, however great in themselves we may consider their absolute value.

For this purpose, then, the application of entomological knowledge, it is desirable that our library should contain works on natural history of every description, including the observations of the geographer, the traveller, the botanist, and the analytic chemist, the comparative anatomist and the physiologist; all of which are necessary to those who pursue Entomology for useful purposes, and not as the mere amusement of their vacant hours.

But do not mistake my object in these remarks. I am well aware that no purchases of books on these general subjects can be made by us at present, and that the little we can ever spare from our funds ought to be devoted to the purchase of those books which are of immediate interest to the professed entomologist. I wish to show, however, that those contributions of works on general subjects with which we have already been favoured, are of real value to us, as collateral aids in the prosecution of the study of philosophic Entomology; and I trust that our friends will continue to favour us with donations of these as well as of strictly entomological works.

As our library now contains many volumes, it would be highly desirable that the whole should be classified and arranged under general heads. I would strongly recommend to the Society that a separate Committee should be formed, into whose hands the entire management of the Library and our Collections of Insects should be given, and from whom all regulations respecting the safe custody, loan and return of the books, and all changes in the arrangement of the insects in the cabinets, should emanate. I am exceedingly anxious to impress this matter on the attention of the members,

because, as our library accumulates, it will become every year more and more troublesome to find, without loss of time, any work that may be required for reference during the discussions at our meetings. This inconvenience has already been felt, and if some arrangements are not made for the better classification of our books, it will continue to be increased.

The preservation of our insects also is a point of very great importance. When we remember that this Society possesses the entire collection of insects made by Mr. Kirby during a long and active life, and that many of the specimens it contains are those from which the descriptions of species have been taken ; and that, besides these, we have a good collection from different quarters of the world, the donations of our friends in years past, I think it must be acknowledged that the whole, together with our library, ought to be placed under the most efficient guardianship. I am the more urgent on the necessity of this, because alterations have been made in the arrangement of insects in our cabinets which I cannot help regarding as of somewhat questionable utility, and perhaps objectionable.

The Committee I would propose for the control of these matters might consist of the President of the Society for the time being, and of four members, chosen from the Society, yearly, either by the Council or at the Annual Meeting ; these might form a Library Committee, distinct from the Council, and in no way connected with it, except as regards the outlay of money.

While directing attention to the care of the insects we possess, I am sorry to say that our collection has not been increased during the past year. On former years some of our friends abroad, or at home, have remembered that the Entomological Society exists, and that its members would feel gratified with any additions to the contents of its cabinets ; but not a single specimen has been received during the year from any one of our numerous corresponding or foreign members, or from our friends resident amongst us, notwithstanding the earnest appeal made to them in my Address at our last Anniversary. This is the more remarkable from the fact that on former years we have frequently had the pleasure of receiving donations of insects, especially from our friends resident in the East and West Indies. But I trust that ere long we shall be more fortunate.

Several naturalists especially devoted to Entomology have recently proceeded to widely distant parts of the world in pursuit of the objects of natural history in general, and doubtless many valuable acquisitions will be obtained.

The gentlemen to whom I allude are amongst our own friends : Mr. Barnston, our corresponding member, has proceeded to the frigid regions of Labrador ; Mr. Stephenson, also our corresponding member, to Australia and New Zealand ; Mr. Gosse, who has occasionally attended our meetings, to the hot climate of Jamaica ; Mr. Dyson, a young and enterprising naturalist, who also has visited us, and who is especially devoted to Entomology, to the pestilential regions of Honduras and Yucatan in central America ; and Mr. Lowe to Singapore, and the piratical coasts of the little-explored regions of Borneo. From these various sources, as well as from our other friends and corresponding members in different parts of the world, we hope to receive accessions for our own cabinets, and also for those of our great national establishment,—the British Museum.

Before noticing what has been done for Entomology elsewhere, let us review the subjects that have been brought before us at our general meetings.

Twenty-four papers and written communications have been read ; a number equal to that of last year. Amongst these I may notice one on some new species of *Parastasia*, by Professor Erichson of Berlin ; a memoir on the economy of the genus *Palmon*, by Mr. Westwood ; notes on the habits of some species of *Osmia* which nidificate in snail-shells, by Mr. Smith ; on some New Holland Buprestidæ ; and on the Fossil Insects of Aix in Provence, by Mr. Hope ; and on the Entomology of New Zealand, by Mr. Stephenson.

The objects that have been exhibited and discussed at our meetings may be arranged under three heads :—

First, Insects indigenous to this country, but new, or rare.

Secondly, Exotic species of extensive or peculiar geographical distribution ; and

Thirdly, Subjects of anatomical or physiological interest.

Exhibitions of specimens of these kinds, and discussions on their natural history, ought always to be encouraged at our meetings, however trifling some of the objects may appear to the casual observer. The discovery of a new insect, or the detection of its presence in localities in which it has not before been observed, is often of very great importance. We have had proof of this, even during the last year, in the facts that were elicited in a discussion which took place on the *Coccus* that is ravaging the orange-trees of the Azores. This insect, diminutive and contemptible as it appears to be, has produced effects, within the period of only three years, little short of the scourge of famine ; and yet the object that has worked

this mischief and distress has all the appearance of a perfectly harmless and inanimate, scale-like body. Applications were made to the Entomological Society, by gentlemen connected with the Azores, for some opinion respecting the best method of mitigating this scourge, and a Committee was appointed to investigate the subject. The report drawn up on this occasion has been transmitted to the gentlemen who applied to us, and we are now awaiting the result.

Amongst the rare insects that have been exhibited at our meetings, I may notice the *Yponomeuta sedella* of Duponchel, a species new to this country, taken by J. F. Stephens, Esq. at Norwood; *Deiliphila Galii* at Harrow, by Mr. Bond; *Tortrix rutilana* of Hubner, new to this country, taken on juniper-bushes near Croydon, by Mr. Bedell; and *Serropalpus striatus*, also new, by Mr. Plant in Leicestershire; *Hipparchia Melampus*, captured in Scotland by Mr. Weaver; and *Cossonus tardii*, in great abundance in decayed beach- and sycamore-trees in Cornwall, by Vernon Wollaston, Esq. These exhibitions of insects are of value, as showing the occurrence, in this country, of species that may sometimes occasion serious damage to the horticulturist or to the farmer.

Several interesting communications have also been made to the Society relating to the geographical distribution of foreign species. Mr. Westwood has exhibited specimens of *Yucca* from tropical America; a new species of *Derbe* from Bombay, received from our corresponding member, Ezra Downes, Esq.; and several unfigured *Papilio*s from Assam, sent by Major Jenkins; as well as *Saturnia Selene* from India, by Captain Hutton. This species has been described by the latter gentleman as *Plectropteron Dianæ*. Mr. Doubleday also has exhibited a new and splendid species of *Polyommatus*, from the Missouri; the fifth species of the genus *Polyommatus* peculiar to North America; also a collection of North American species from the neighbourhood of Albany River, in a climate corresponding to that of Lapland. A large proportion of the species was nearly identical with those of this country, while others were unlike those of any part of Europe. Amongst the latter were a large *Hepialus*, and two species of *Alypia*. Other species were identical with those of the almost tropical region of Florida. This is a wide geographical range of species collected in one country, and leads us to a curious inquiry respecting the localization of insects, and to many interesting questions respecting their migrations and powers of flight. We have often been assured by voyagers that flights of migrating insects have been observed at sea, and that some have been captured many miles

from land; but the accounts we have received have usually been vague and uncertain, and consequently but little attended to, owing to the parties who related the facts not being entomologists. But two authentic instances of insects captured at a great distance from land have just occurred. Mr. Saunders exhibited, at our December meeting, a specimen of *Æshna* that was taken at sea by our corresponding member Mr. Stephenson, in his voyage from this country to New Zealand last year. This insect is a recognised African species, and was captured on the Atlantic more than six hundred miles in a direct line from land. In all probability it had been driven across the ocean by the trade winds, which blow continuously at that season of the year in a direction oblique to the course of the ship that was conveying Mr. Stephenson outwards. The other instance that has just come to my knowledge is mentioned in a letter from Mr. Dyson to Mr. Cuming. Mr. Dyson states that while at sea, in October last, when about six hundred miles from Cape de Verd Islands, and twelve hundred from Guadaloupe, he observed a large butterfly, apparently of the genus *Morpho* (?), flying round the ship, but he could not succeed in capturing it. These are facts related by entomologists who could not have mistaken the objects observed, and consequently they are entitled to full credit. They are full of interest in relation to a subject of physiological discussion,—the power of flight supposed to be possessed by these our little favourites, and the speed with which they are conveyed across the ocean; whether by an actual expenditure of muscular energy, or whether carried by the force of the wind alone. My own opinion certainly is, that the amount of muscular power exerted during flight is trifling compared with what we have usually supposed it to be, and that in these instances the insects have been greatly aided in their progress by the wind. The speed at which they must have traversed the ocean seems to confirm this view, as it is well known that the *Æshna* will not live more than a few days if unable to obtain its living food.

Amongst the subjects of physiological interest exhibited at our meetings, I may notice an instance of Gynandromorphism in *Arctia Caja*, by Mr. Evans; specimens of *Cossonus*, found in abundance in a recently opened barrow in Lancashire, by the Rev. W. Sibson; the parasitism of *Cælyoxys conica* on *Saropoda furcata*, by myself; and the abnormal development and deficiency of joints in both antennæ of *Otiorrhynchus picipes*, by Mr. Walton. But that which has appeared to me to be of the greatest interest is a subject that has often been before this Society,—the reproduction of lost parts in the

Articulata. At a meeting of this Society in March last, Mr. Westwood exhibited a specimen of *Cræsus septentrionalis* "which had one of the hind legs much smaller than the other, and which he regarded as an instance of *arrested development*," in accordance with some very decided opinions formerly expressed by him. He also exhibited a large apterous *Phasma*, which had one of the hind legs smaller than the other; and this he regarded as an instance of *reproduction*. Both these examples were precisely analogous to the instance of reproduction in *Phasma* described in Mr. Fortnum's letter, and mentioned in my Address last year. On exhibiting these specimens Mr. Westwood expressed an opinion that the reproduction of lost parts can take place only in those insects which undergo an incomplete metamorphosis, and have active larvæ and pupæ, similar to the imago. He also announced his belief that those insects which undergo a complete metamorphosis,—as, for instance, the Lepidoptera,—are incapable of reproducing lost parts. To this very imperfect and partial view of a most important subject,—a view so little in accordance with the simple, uniform, and beautiful laws by which nature invariably works,—I could not, as your President, afford my assent; but expressed my decided belief that a reproduction of lost parts may take place in every Order of Insects, and throughout the whole of the Articulata. Unwilling, however, that either opinion should go forth to the world as that of the Entomological Society of London, or of its President, or of its Secretary, unsupported by facts, I availed myself of the earliest opportunity during the past summer of putting these opinions to the test of actual experiment. Several series of experiments were made on *Vanessa urticæ* and *Vanessa Iö* with complete success, and the results of these experiments, the perfect insects, with their diminutive and newly-formed limbs, were exhibited to the Society at our last October meeting. Some of these specimens are now deposited in the cabinets of the British Museum, and others in the Hunterian Museum of the Royal College of Surgeons; and the details of the inquiries have been published elsewhere; so that this physiological question may now be regarded as completely settled. Experiments similar to my own were also made about the same time by one of our best physiologists, H. D. S. Goodsir, Esq., on the Crustacea. An interesting account of them was given by Mr. Goodsir to this Society when my own specimens of Lepidoptera were exhibited; and it was gratifying to find, that although some of the details of experiments on these two Classes of Articulata differed slightly, the great principles in both were precisely the same.

These are the subjects that have been brought before the Society during the past year. I trust that this somewhat extended enumeration of them will prove to our scientific brethren, in other departments of Natural History, that we have not been idle. I have entered into greater details respecting them on this occasion, because our proceedings of late have been less extensively made known to the public, without the walls of our meeting-room, than formerly; the numerous engagements of our Secretary during the two years I have had the honour to occupy this Chair, having prevented him from transmitting with regularity an account of our proceedings to the public journals. This circumstance is the more to be regretted, because it may have operated so as to have prejudiced the interest of the Society, by allowing the public to suppose that as a body we had become defunct. This I fear may in part account for the few additions that have been made to our list of members; as it is mainly by showing the world that our labours in the acquisition of knowledge are unabated that others are excited to join with us in its pursuit. I do hope that this omission, which I feel myself called upon to point out, on retiring from the Chair, and which I have already endeavoured to correct, will be quickly remedied, and that the public will be fully and regularly informed of our proceedings under the influence of my successor.

And now, Gentlemen, I must give you some account of what has been done for Entomology elsewhere.

That entomological collection for which, next to our own, we must all feel the greatest interest, and which, I am quite sure, will ere long be unrivalled in the world,—the collection in the British Museum, has received a vast accession of specimens of insects during the past year. The number of articulated animals added to the collection during the year amounts to twenty thousand eight hundred and sixty-seven. Of these, from six to seven thousand insects, desiderata to the collection, were presented by the Entomological Club. The remainder includes a collection by Dr. Andrew Smith, from South Africa, obtained by him during his residence on that continent; also a splendid collection of Australian species presented by the Lords of the Admiralty; and various smaller collections by the Earl of Derby, and by private individuals. The ardent hope expressed in my former Address, that our national collection may soon outrival that of every other establishment in Europe, thus appears likely to be speedily realized; and I may congratulate all lovers of Entomology on the urbanity of those who now have charge of this department of our national collection, on the ready access that is

allowed to the cabinets, and on the fostering care afforded to every department of Natural History by the Government. In former years this was too little attended to, while the governments of other countries, with scarcely half the means at their command that we possessed, left us very far behind in the natural-history departments of science. But a brighter day is now beaming upon us, and I trust that the energy that has begun to be developed, in the management of every department of the Museum, may be still further increased, and may be extended to every institution in the country. During the past two years a new feature has been developed in the Museum through the energy of its principal officers, in the publication of separate descriptive catalogues of its treasures. Those of Zoology are publishing under the superintendence of the chief officer, one of our retiring Council, J. E. Gray, Esq. Two of these catalogues have appeared. One of them, *The Myriapoda*, prepared by Mr. Gray, is founded on the arrangement of this class in the cabinets as proposed by myself; the other is a new arrangement and complete revision of the species of *Diurnal Lepidoptera*, by Mr. Doubleday of the Zoological Department. This latter catalogue has just been published. It is a complete bibliographical record of the whole of the species in the Museum cabinets, with their localities and numerous synonyms; together with about one hundred and sixty species more than have heretofore been described. The known superiority of Mr. Doubleday's information on this division of Insects, and his extensive communication with the most distinguished naturalists of this country, of the continent, and of America, are better guarantees of the accuracy and value of his work, and of the assistance it will afford us in the study of these groups, than any commendation it is possible for me to bestow on it. I may also state that it is the intention of the chief officer, with the sanction of the Trustees of the Museum, to have catalogues prepared of each division of the Zoological Collection. Mr. Doubleday will proceed with the *Nocturnal Lepidoptera*, and Mr. White with the *Crustacea*. This latter catalogue is already advanced, and will probably be published during the year.

But while directing attention to the entomological stores in our great National Museum, and to what is now doing for Entomology by its officers, let us not forget what has already been done in the museums of other institutions in this Metropolis.

The Hunterian Museum of the Royal College of Surgeons of England was founded by the labours of one most comprehensive and

gigantic mind, that aimed to collect information from every living source in the organic world, and apply it to the understanding of those laws of creation on which even our very existence itself depends,—to the understanding and treatment of disease,—the repa-
 ration of injury,—and the restoration of health.

With this object in view, the genius of Hunter conceived the magnificent plan of founding a museum that should illustrate the structure and function of every organ of the body, throughout the whole of animated nature; and it may well be imagined that the articulated animals supplied him with a large proportion of illustrations for his grand design.

I regret that these accumulated treasures should hitherto have been so little known to entomologists; affording, as they do, such incontestable proofs of the utility of combining a knowledge of the natural history and habits of insects with investigations of structure. The Hunterian Museum contains the largest collection of preparations and dissections of insects in the world, and nearly every specimen was prepared by the hand of Hunter himself. Of these there are 50 preparations of Coleoptera, comprising 18 species; 30 of Orthoptera, including 11 species; 20 of Hemiptera, of which there are 8 species; 23 of Neuroptera, illustrating 11 species; 132 of Hymenoptera, of which there are 21 species; 114 of Lepidoptera, showing dissections of 19 species; and 13 of Diptera, exemplifying 5 species; besides 68 of Crustacea and 20 of Arachnida, the entire collection amounting to nearly 500 preparations of those Articulata which are most interesting to the entomologist. These preparations illustrate the habits of the gregarious and the parasitic Hymenoptera, the œconomy of the Silkworm and the Termite; and the digestive, circulatory, and reproductive organs of the body in the different classes.

Many of the facts exemplified in these preparations are shown in Hunter's drawings, published in the Museum Catalogue by our distinguished member Professor Owen, who is following the example of his great predecessor, and is rapidly adding to the stores of his museum; and I need scarcely remark, that the admirable elucidation given by Professor Owen, in the Museum Catalogue, of the labours of his great example, alike reflects honour on himself and on the country that is proud to claim him as its own.

Besides the extensive collection in the Hunterian Museum, let me also direct you to others in the museums of the United Service,

the Linnean and Zoological Societies, University College, King's College, Guy's Hospital, and St. Bartholomew's; all of which, founded in the same spirit as that of the College of Surgeons, contain subjects worthy of the notice of the philosophic entomologist.

The number of works especially devoted to Entomology and the other Articulata, published in this country during the past year, has been singularly small.

The beautiful 'Book of Moths' by Mr. Humphries has been continued, and will very soon be completed, and form a valuable acquisition to the British entomologist.

A new and elegant work on the British Crustacea by Professor Bell has been commenced, which will contain numerous delineations of the species.

Some additional numbers of the 'Arcana Entomologica,' by Mr. Westwood, have also been published. They comprise delineations of rare and beautiful Goliath Beetles from Tropical Africa; new species of Papilios; the Thynnidae of New South Wales; and new Paussidae. These, together with a few Crustacea in Professor Bell's work, are almost the whole of the entomological subjects published by Mr. Westwood during the year; and I doubt not that our entomological friends will join with me in regretting that he should thus have neglected our little favourites,—the beautiful forms of truthful nature,—her faëry pencillings,—her most exquisite works,—to copy the daubings of a missal, or to trace with mechanical exactitude facsimiles of the abortions of ignorant ages, and thus minister to the eccentricities of public taste to the neglect of genuine art. Let us hope that the eye and hand of our enterprising Secretary will quickly again be employed on subjects worthy of his talent.

Of entomological memoirs in the Transactions of societies I may first notice those in our own. The Part we are now publishing contains a greater variety than usual, and, I trust, will give satisfaction to all. It includes a Monograph of species of the genus *Ceria*, by Mr. Saunders; a paper on the Pulvilli of Flies, by our honorary member Mr. Spence; one on the genus *Hyleus*, by Mr. Smith; a new genus of Longicorn Beetles, by Capt. Parry; some observations on a curious change in the habits of *Megachile centuncularis*; and also a paper on the *Hive Bee*, by myself; descriptions of the Coleoptera of China, by Mr. Hope; on *Cryptodus* and its allies, by Mr. Westwood; some new Coleoptera from the Philippine Islands, by Mr. Waterhouse; and a careful description of a Gynandromorphous Sphinx, by Mr. Thrupp.

The Transactions of the Royal Society for 1844 contain my own paper on the Reproduction of Lost Parts in Insects, &c., and a paper by Mr. Wilson on the New Entozoon that infests the Sebaceous Follicles of the Human Skin, the *Demodex folliculorum* of Owen, originally described by its discoverer, Dr. Simon of Berlin.

The Transactions of the Linnæan Society for last year contain a paper on the Nests of two species of gregarious *Tenthredinidæ* from Brazil by Mr. Curtis; and also the first part of a Monograph by myself on the Class Myriapoda.

In the Transactions of the Royal Agricultural Society there is a paper by Mr. Curtis on Insects injurious to the Turnip Crops; and other papers by the same author have been published in Professor Lindley's 'Gardener's Chronicle.'

The 'Annals and Magazine of Natural History' contain papers by Mr. Walton on the Species and Synonyms of Rhynchites, Bruchus and Apion; by Mr. Brodie on a Fossil Isopodous Crustacean; by myself on the Chilopoda and Chilognatha in the cabinets of the British Museum; by Mr. Blackwall on new species of Araneidea; by Mr. Goodsir on Araneiform Crustacea; Mr. Walker on the Chalcididæ of the Arctic Regions; Mr. White on Chinese Coleoptera and Hemiptera; and Mr. Doubleday on some new species of Butterflies.

Several excellent papers have also been published in the 'Zoologist' by our Curator, Mr. Smith. These comprise descriptions of new species, with a complete revision of the families of British Humble Bees (*Bombus*); the Wasp Bees (*Nomada*); the Leaf-culled Bees (*Megachile*); and the Mason Bees (*Osmia*). It is much to be regretted that Mr. Smith should have preferred to publish these little monographs on the Bees scattered through a periodical journal, instead of allowing them to grace our own Transactions, considering that as our Curator he has enjoyed the best possible opportunities of examining Mr. Kirby's original specimens in our cabinet, and of correcting some of the descriptions in the '*Monographia Apum Angliæ*.' Some excellent notices of Lepidoptera have also appeared in the same journal by Mr. Doubleday; and Mr. Gosse, now in Jamaica, has given a very interesting account of the habits of some American insects.

Lastly, the 'Edinburgh Philosophical Journal' contains some papers on Crustacea by Mr. Goodsir.

Before noticing the foreign works, I may state that the work on the Fossil Insects of this country, announced by the Rev. J. P. Brodie, is likely to be published in the course of a few months.

Of the foreign works on Entomology that have come to my knowledge as in the course of publication, I may state that in *France* several splendid folios, which I noticed in my former Address, are still in progress: D'Urville's Voyage to the Antarctic in the *Astrolabe* and *Zélée*, with the Crustacea and Insects by Eydoux and Souleyet, together with our distinguished foreign member M. Milne Edwards, and M. Blanchard:—D'Orbigny's Voyage to South America, with the Crustacea by M. Lucas, and Insects by M. Blanchard: this work is nearly completed. Another great work on the Annu-
losa of the north-eastern coasts of Africa, the province of Algiers, has recently been announced, the Insects of which will be described by M. Lucas.

The third volume of the 'Suites à Buffon,' by Baron Walckenaer, has lately been published; it contains many new species of Arachnida by M. Gervais.

The Transactions of the Entomological Society of France contain some very interesting papers, of which I may notice especially one on the Abnormal Development of the Claws of Crustacea by M. Lucas, and Observations on the Thoracic Stigmata of the Larvæ of the Buprestidæ by Leon Dufour, and on the Wings of Diptera by M. Macquart. The 'Annals of the Natural Sciences,' by M. Milne Edwards, has also some interesting memoirs, especially on the Anatomy of the Annelida by Quatrefages, and on the Arrangement of the Myriapoda by M. Gervais. Besides these, the 'Natural History Magazine,' and the 'Zoological Review' of M. Guérin Ménéville, continue to present us with many valuable communications. In the latter of these works there is an abstract of a valuable paper that must engage the attention of every entomologist: it is by the distinguished German Professor, Dr. Siebold of Erlangen, on the Metamorphoses of that extremely curious group of Insects, the Strepsiptera.

Although I have already trespassed much too long on the attention of the Society to venture on any analysis of the many good papers in the publications of our entomological brethren of France, I cannot pass over the abstract of Dr. Siebold's work, given by M. Guérin Ménéville, without mentioning a few of the curious facts which it details.

The species on which Dr. Siebold has made his observations are *Stylops Melittæ*, and *Xenos Rossii* and *Sphecidarum*.

The diminutive, parasitic Strepsiptera, the giant of which scarcely

exceeds one-fourth of an inch in length, are of especial interest to this Society. Discovered and first described by our venerable friend Mr. Kirby, we have adopted the *Stylops* as our emblem; any elucidation of its heretofore obscure natural history must therefore be of particular interest to us. This has been supplied by Dr. Siebold, who now shows that the Strepsiptera undergo a singular metamorphosis; that the males and females differ from each other, the metamorphosis of the males being complete, they alone being furnished with wings: the females, on the contrary, have neither legs, wings, nor eyes, and greatly resemble larvæ. These females are viviparous, and never quit the bodies of the Hymenoptera in which they live as parasites. The young Strepsiptera, at the moment that they burst the eggs in which they are developed, within the body of the parent, have six legs, and are furnished with organs of manducation. These are the diminutive objects described in Mr. Westwood's paper, in a former volume of our Transactions, as the parasites of *Stylops*; and as such they were regarded at first by Klug and also by Dr. Siebold. These little hexapodous larvæ infest the surface of the abdomen of bees, within which their parent-mothers live and die. In this way the young *Stylops* is carried into the nests of the Hymenoptera, and escaping on the bodies of the larvæ, penetrate their soft skins, and become parasites on them as their parents have been in the bodies of the female bees. These larvæ shed their skins, become apodal, and move very slowly. They have then a distinct mouth and jaws, and a simple cæcal intestine, but no anal aperture. The body is formed of nine segments, of which the first is the largest, and may be considered as a cephalothorax. In this state the males are easily distinguished from the females. The cephalothorax of the male larva is conical and arched, and the last segment of the body is straight and pointed. In the females the cephalothorax is truncated or rounded in front, and flattened, or scale-like, in the rest of its extent, and the terminal segment of the body is large and rounded.

These are a few of the many curious facts noticed in M. Guérin's compendium of Dr. Siebold's communication, to which I must now refer you. These inquiries sufficiently prove that Entomology is cultivated in *Germany* with as much philosophic zeal as in any part of the continent. Of other works published in that country last year, I may notice one by our friend and member Professor Burmeister on that obscure division of Articulata, the *Trilobites*; and

also the first part of the fourth volume of his admirable 'Handbook of Systematic Entomology.' It is scarcely necessary that I should remind you of the value of everything that proceeds from the pen of our distinguished member; who, in addition to his unsurpassed skill in the anatomy of insects, is one of the very best authorities on the arrangement of them, and may justly be regarded as the Latreille of the day on Systematic Entomology. In addition to these works, I may notice the continuation of Koch's descriptions of Hemiptera and Arachnida; also a fine work on the Lepidoptera of the Caucasian provinces of Russia, the work of twenty-five years' labour, by Eversmann. These are the chief entomological publications that have appeared on the continent during the last year.

From this enumeration of works, and from the subjects which many of them embrace, I think it must be seen that the pursuit of Entomology is becoming more and more philosophic; and, I trust, will be made applicable to useful purposes. This is the great object of all rational knowledge, and is that which ought to guide us in all our investigations of nature. Our inquiries as naturalists,—as entomologists, should not terminate with the simple ascertainment of a curious or an isolated fact, but should always be directed towards the application of facts to purposes of science; either immediately, to matters of public interest, to the agriculturist, the horticulturist, or to the arts; or collaterally, to the elucidation of the general laws of life, on which health and disease depend:—to bring the scattered details of observations which the inexhaustible study of our favourite pursuit, Entomology, affords, to the illustration of the grand scheme of nature and of life,—the great principles of creation in the living world. Let the idle and the flippant mock at our pursuits,—let the cynic scowl and sneer at the earnestness of that attention which is devoted to watching the moment when the larva spins its cocoon; or when the perfected insect awakes and bursts forth from its quiescent, death-like sleep; or that which is bestowed on rearing the maggot from the egg;—and then let them turn to the gay habiliments that invest their own persons,—that add comfort and magnificence to their dwellings:—let them also regard the materials that alike protect the wealthy and the poor from the rigour of the season; and let them remember, that the one which contributes to their magnificence is the sole product of the larva whose changes they regard as too trivial for their notice; and that the other may be attacked and destroyed by the diminutive maggot which they scorn.

So, again, let those who regard our discussions on the structure of the microscopie species that infest the orchard, the pasture, or the greenhouse, as trivial or useless, remember that the mere ascertainment of the presence of a pest is not sufficient to enable us to effect its removal. Many microscopie objects are so closely allied in their general appearance, but are so totally dissimilar in their habits, and consequently in their effects on our produce, that it is only with difficulty the most experienced eye is enabled to distinguish them: as the differences often depend entirely on trivial variations of form in some, otherwise unimportant, structure, which the less-experienced observers constantly overlook. A marked example of this occurred at one of our meetings, in the instance of the *Coccus* of the orange-trees. This little pest had been regarded as the *Coccus hesperidum*, but our friend Mr. Spence recognised it at once as the mussel-shell *Coccus* described by Geoffroy. On this single fact of recognition, the result of extensive experiments and a vast outlay of capital might have depended. So complete have been the ravages of this insect, that one of the Azores, the island of Fayal, lost its entire produce from this cause alone. The usual exportation of fruit from Fayal has been 12,000 chests annually, but in 1843 not a single chest was exported. This injury has already extended to St. Michael's, and is still continuing; and the inhabitants of the whole of that group of volcanic islands, depending almost entirely on the produce of their orange-groves, and despairing of retrieving their prospects, are fast turning their attention to the cultivation of other objects of commerce. This amount of injury to a whole population by a diminutive and apparently contemptible insect has been the result of but three years. The effects of this insect on a single article of luxury may fairly be adduced to show that entomological inquiries are deserving of full attention. The orange trade between this country and the Azores gives employment to upwards of 200 sail of vessels; and, as I am credibly informed, the orange trade alone returns to the revenue of this country an import duty of more than £50,000 per year. M'Culloch, in his 'Dictionary of Commerce' (1844), has shown that the amount of duty paid by the orange and lemon trade, on an average of three years, ending with and including the year 1842, was £70,833 per year. The number of boxes of fruit, imported for home consumption, on which this duty was levied, amounted to 334,070, and the estimated number of the fruit at 217,172, 363! The support of the numerous families, the fortunes of the merchants engaged in

this commerce, and even the revenue of this country, and the wealth, ay, and even the very existence of a whole population, are thus directly affected by the operations of a diminutive insect.

Gentlemen, I have now to thank you for your attention; and with every wish for the prosperity of our Society,—that perfect unanimity may always exist amongst us, and that every petty jealousy in the management of our affairs, like an unsupported flame, may be lost in its own embers, I would say, on leaving this Chair, in the words of our honorary President,

Floreat Entomologia.

GEORGE NEWPORT.

Adjourned Anniversary Meeting of the Entomological Society of
London, February 10th, 1845.

Resolved,—"That the thanks of the Society are due to the President for his Address, and that he be requested to allow it to be printed for distribution amongst the members."

J. E. GRAY,

(Secretary pro tem.)

